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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/741,045

12/21/2000

Sung-Kon Kim

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06/28/2005

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/741,045

Applicant(s)

KIM, SUNG-KON

Examiner

Thoi V. Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 ~~is~~/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 ~~is~~/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to the Amendment filed April 07, 2005.

Accordingly, claims 6 and 16 were amended. Currently, claims 1-20 are pending in this application.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. **Claims 1-5, 7, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Nagakubo et al. (USPN 6,219,117 B1).**

Re claims 1 and 3, as shown in Figs. 1 and 3, Nagakubo et al. discloses a liquid crystal display device, comprising:

a liquid crystal panel including two substrates with a liquid crystal layer interposed therebetween;

a back light device including:

- a) at least one lamp 8;
- b) a light guide plate 5 for guiding light emitting from the lamp;
- c) a diffusing sheet 4 for diffusing light emitting from the light guide plate;
- d) at least one prism sheet 3 located on the diffusing sheet, concentrating light (col. 6, lines 30-34);
- e) a protecting sheet 2 located on the prism sheet;
- f) a reflector 6 located under the light guide plate, reflecting light directing downward the light guide plate,

wherein an edge portion of the diffusing sheet adjacent to the lamp includes a printing portion 4a made of colorless ink (white material) containing a light scattering agent (col. 7, lines 22-47);

wherein, re claims 2 and 4, there are two lamps (col. 14, lines 9-15);

wherein, re claims 5 and 7, the light guide plate has a plurality of patterns 5b (col. 6, lines 42-44); and

wherein, re claims 9 and 10, light reflected from a bottom surface of the device causes constructive interference with light emitting from the lamp, whereby a bright line is prevented (col. 14, lines 16-41);

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2871

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagakubo et al. (USPN 6,219,117 B1) in view of Mashino et al. (USPN 5,886,759).**

Nagakubo et al. discloses a liquid crystal display device that is basically the same as that recited in claims 6 and 8 except for the light guide plate having a plurality of dot patterns.

As shown in Fig. 1A, Mashino et al. discloses a back light device comprising a light guide plate 37 having a pattern of a plurality of light diffusion dots 67 on the underside of the light guide plate for transmitting light introduced into the light guide plate and subjected to total reflection (col. 4, lines 34-38).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Nagakubo et al. with the teaching of Mashino et al. by forming a light guide plate having a plurality of dot patterns for effectively transmitting light introduced into the light guide (col. 4, lines 34-38).

**6. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al. (USPN 6,425,673 B1) in view of Nagakubo et al. (USPN 6,219,117 B1).**

Re claim 11, as shown in Fig. 2, Suga et al. discloses a back light device for use in a liquid crystal display device, comprising;

at least one lamp 8;

a light guide plate 2 for guiding light emitting from the lamp;  
a diffusing sheet 13 for diffusing light emitting from the light guide plate 2;  
at least one prism sheet 12 located on the diffusing sheet, concentrating light;  
and  
a reflector 14 located under the light guide plate, reflecting light directing  
downward the light guide plate.

As shown in Fig. 6B, at least one of an edge portion of the reflector 14 includes a  
diffusion-reflective pattern 26 (Applicant's printing portion) made of white ink  
(Applicant's colorless ink) containing a light scattering agent,

wherein, re claims 19 and 20, light reflected from a bottom surface of the device  
causes constructive interference with light emitting from the lamp, whereby a bright line  
is prevented (col. 13, lines 19-28).

Re claim 12, it is obvious that the liquid crystal display device comprises two  
substrates with a liquid crystal layer interposed therebetween as well known in the art.

Suga et al. discloses a back light device for use in a liquid crystal display device  
that is basically the same as that recited in claims 11 and 12 except for a protecting  
sheet located on the prism sheet.

As shown in Fig. 1, Nagakubo et al. discloses a liquid crystal display device  
comprising a liquid crystal panel 1 and a protecting sheet 2 located on a prism sheet 3  
to diffuse light and protect the surface of the prism sheet 3 (col. 6, lines 25-30).

Thus, it would have been obvious to one having ordinary skill in the art at the  
time the invention was made to modify the back light device of Suga et al. with the

teaching of Nagakubo et al. by forming a protecting sheet on the prism sheet to protect the surface of the prism sheet (col. 6, lines 25-30).

Re claims 13 and 14, the back light device of Suga et al. has two lamps 8.

Finally, re claims 15-18, the light guide plate of Suga et al. has a plurality of patterns 6, wherein the patterns are dots (col. 6, lines 60-67, see also Fig. 14).

### ***Response to Arguments***

7. Applicant's arguments filed April 07, 2005 have been fully considered but they are not persuasive.

Re claims 1-10, Applicant argued that Nagakubo fails to disclose or suggest "a printing portion made of colorless ink containing a light scattering agent." That is, the dot pattern of Nagakubo is to control the quantity of light and is fundamentally different from the printing portion of the invention, which functions to scatter light (to prevent bright line) and not to control the quantity of light; and that a white material of Nagakubo is incompatible to colorless ink of the application.

The Examiner disagrees with the Applicant's remarks because, as a part of the diffusing sheet 4 (which has scattering function), the printing portion 4a is made of a white material which not only transmits a part of light from the backlight source but also makes irregular reflection the remaining light from the backlight source in the light guide plate (column 7, lines 22-35). Accordingly, the printing portion 4a also has a scattering function.

Moreover, according to Merriam Webster's Collegiate Dictionary, Tenth Edition, "white" is defined as "free from color" (page 1348) and "colorless" is defined as "lacking

color” (page 227). Therefore, a “colorless ink” is the same as an “ink having a white material.”

Furthermore, since the claimed and prior art products are identical, claimed functions are presumed to be inherent (see MPEP 2112.01). Therefore, the dot pattern of Nagakubo also functions to prevent bright line and thus, a prima facie of anticipation has been established.

Finally, re claims 6 and 8, the reference of Mashino is employed for teaching a light guide plate having a multiplicity of light diffusion dots for effectively transmitting light introduced into the light guide plate.

Re claims 11-20, Applicant argued that Suga utterly fails to disclose or suggest a printing portion formed from a colorless ink containing light scattering material as claimed in claims 11 and 12. The Examiner disagrees with Applicant’s remarks since, as clearly shown in Fig. 6B, Suga discloses an edge portion of the reflector 14 includes a diffusion-reflective pattern 26 made of white ink to prevent the occurrence of a bright line in the vicinity of the light-emitting surface (col. 13, lines 19-28). Accordingly, it is obvious that the diffusion-reflective pattern contains light scattering material to scatter light (to prevent bright line). Moreover, according to the definitions of “white” and “colorless” from Merriam Webster’s Collegiate Dictionary above, a white ink is not different and can be compared to a colorless ink.

Finally, the reference of Nagakubo is employed for teaching a protecting sheet on the prism sheet to protect the surface of the prism sheet. Thus, a prima facie case of obviousness has been made.



**Conclusion**

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

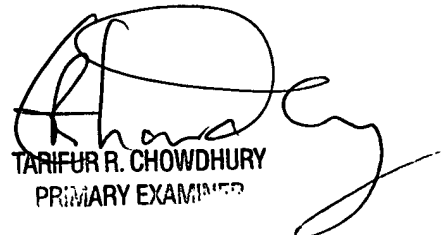
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



06/13/2005



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER